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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,870	12/22/2005	Thomas Meredith Brown	Q88659	8802

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WASHINGTON, DC 20037

EXAMINER

LE, THAO P

ART UNIT	PAPER NUMBER
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2818

MAIL DATE	DELIVERY MODE
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12/31/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/538,870

Applicant(s)

BROWN ET AL.

Examiner

Thao P. Le

Art Unit

2818

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte* Quayle, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-53 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-53 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 6/14/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Preliminary Amendment

Preliminary Amendment filed on 6/14/05 has been entered.

Claims 3, 5-6, 8-10, 12-13, 15-17, 21-23, 25-27, 29, 31-32, 34, 37, 39-40, 44-47, 49, 51-53 have been amended.

Claims 1-53 are pending.

Priority Acknowledge is made of applicants' claim for foreign priority base on an application 0229191.2 filed in United Kingdom on 12/14/2002.

It is noted that Applicants have filled a certified copy of said application as required by U.S.C 119, which papers have been placed of record in the file.

Information Disclosure Statement

The information disclosure statement filed 06/14/2005 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Specification

The specification is objected to for the following reason:

The specification should include the cross reference of the related data.

Claim Objections

Claim 1 is objected to because of the following informalities/grammatical problems:

In claim 1, line 5: "... of the surface of the or each non-planarizing layer...".

In claim 15, line 1: "...as claimed in claims 13...".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-46 are rejected under 35 USC 102 (e) as being anticipated by Sirringhaus et al., U.S. Publication No. 2005/0071969.

Regarding claim 1, Sirringhaus discloses a method for forming an electronic device in a multilayer structure comprising the steps of (Figs. 1, 4-7):

defining a topographic profile in a laterally extending first layer (Fig. 4);

depositing at least one non-planarizing layer (F8T2, Fig. 4) on top of the first layer such that the topographic profile of the surface of the non-planarizing layer conforms to that of the laterally extending first layer; and

depositing a pattern of at least one additional layer PEDOT/PSS onto the topmost of the non-planarizing layer, such that the lateral location of the additional layer is defined by the shape of the topographic profile of the non-planarizing layer, and whereby the additional layer is laterally aligned with the topographic profile in the first layer.

Regarding claim 2, Sirringhaus discloses the additional layer is deposited from solution.

Regarding claim 3-4, Sirringhaus discloses performing surface modification process which modifies the surface energy of the substrate prior to depositing the additional layer.

Regarding claim 5, Sirringhaus discloses the substrate comprises material PET [0043].

Regarding claims 6-8, Sirringhaus discloses laminating the surface of the substrate by bringing the surface into contact with a flat stamp bearing a surface modification material and the material is SAM which is able to bond to a functional group on the surface (Fig. 6).

Regarding claims 9-11, Sirringhaus discloses wherein the non-planarizing layers are deposited by vacuum deposition and from solution [0082].

Regarding claims 12-14, Sirringhaus discloses the topographic profile is created by embossing the first layer, depositing a solution into at least one depressed region of the profile.

Regarding claims 15-38, Sirringhaus discloses performing a low surface energy polymer modification process on the substrate, the material deposited onto the topographic profile is one or more electrodes of the electronic device.

Regarding claim 39, Sirringhaus discloses the electronic device is a transistor device (claim 29 of Sirringhaus's).

Regarding claims 40-43, Sirringhaus discloses the step of depositing the non-planarizing layer comprising a first and second non-planarizing layer (F8T2 and PMMA) and the first layer is semiconductor layer and the second layer is a gate dielectric layer.

Regarding claims 44-46, Sirringhaus discloses the first layer is confined is less than 10, 5, or 1 um [0042].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 47-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sirringhaus et al., U.S. Publication No. 2005/0071969, in view of Sirringhaus et al., U.S. Patent No. 7,098,061.

Regarding claim 47, Sirringhaus et al., U.S. Publication No. 2005/0071969 fails to disclose the topographic profile comprising at least one raised region and one depressed region. Sirringhaus et al., U.S. Patent No. 7,098,061 discloses the profile comprising at least one raised region and one depressed region. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Sirringhaus et al., U.S. Publication No. 2005/0071969 in view of Sirringhaus et al., U.S. Patent No. 7,098,061 because the raise region will separate the channel and source/drain regions, and avoid the overlap capacitance of channel and source/drain regions.

Regarding claims 48-49, 51-53, Sirringhaus discloses a planarizing sacrificial layer is deposited by polymer solution and by spin coating and the surface energy modification process comprises exposing the surface to vapor.

Regarding claim 50, Sirringhaus fails to disclose the polymer contains siloxane. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use siloxane because it exhibits low adhesion property.

A shortened statutory period for response to this action is set to expire 3 (three) months and 0 (zero) day from the day of this letter. Failure to respond within the period for response will cause the application to become abandoned (see M.P.E.P 710.02(b)).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thao P. Le whose telephone number is 571-272-1785.

The examiner can normally be reached on M-T (7-6).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven H. Loke can be reached on 571-272-1657. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Thao Le/
Thao P. Le
Primary Examiner
December 21, 2007.